

REMARKS

The Office Action dated November 12, 2009, has been received and the following remarks form a full and complete response thereto. Reconsideration of the Office Action rejections is respectfully requested. Claims 18, 23, 25-30, and 37 have been amended, claim 19 has been cancelled, and claims 38-42 have been added. Support for the claim amendments and new claims can be found in Figures 3 and 6, and page 11, line 7- page 16, line 10 of the specification. No new matter has been added.

Response to Rejections under 35 U.S.C. § 103

Claims 18-23, 25-30 and 37 were rejected under 35 U.S.C. § 103(a) as being obvious over Will et al. (U.S. 4,801,514), in view of Ast (U.S. 6,248,427), further in view of Zaborney (U.S. 4,608,323), and still further in view of Floyd (U.S. 5,320,893) and Barth et al. (U.S. 6,294,233). The Examiner asserts that Will teaches in Fig. 3, a paper carrier layer (element 8) with a deposited metal layer (element 22), and a primer layer (element 24) that joins the imprint layer (element 10) to the metal layer, a cover layer (element 14) on top of the imprint layer, with an adhesive layer (element 6) and a release layer below the carrier layer. The Examiner acknowledges that Will does not disclose that the carrier layer for the metal layer may be a plastic film, but asserts that Ast teaches that the carrier layer for a metal film may be plastic or paper. Further, the Examiner acknowledges that the combination of Will and Ast does not disclose that the

metal layer may be end-sealed against corrosion by an adhesive, but asserts that Zaborney discloses a metallic printed layer on a substrate of a label that is covered with a top layer and sealed around the edges with adhesive to prevent corrosion of the ink layer. The Examiner acknowledges that the combination of Will, Ast, and Zaborney does not disclose a seal near the edge of the metal layer comprised of a cut in the metal layer near the edge of the label laminate which is filled with an adhesive seal, but asserts that Floyd discloses sealing of a metallic layer on a substrate between two plastic layers by cutting the metal layer near the edge to form a gap, with plastic from the outer layer filling the gap when the layers are laminated with heat and pressure and that Barth discloses using a liquid resin which cures to fill a gap at the end of a metal layer subject to corrosion. The Examiner maintains his position regarding Floyd and Barth because he asserts that both references deal with a common problem of edge sealing a metal layer in a laminate against corrosion. Thus, the Examiner asserts that it would have been obvious to one of ordinary skill to have used a plastic film layer in place of the paper layer of Will because Ast teaches the equivalent function of these materials as a substrate for a metal layer. Further, the Examiner asserts that it would have been obvious to have provided an adhesive edge seal of the metal layer of Will in view of Ast in order to prevent corrosion based on Zaborney and to have sealed the edge by cutting a gap in the metal and substrate layers near the edge of the label and filled it with resin adhesive or flow of a plastic layer as an alternative to edge because of the Floyd and Barth references.

Applicants submit that the method claims, as amended, are directed to making the battery label according to page 11, line 7 to page 16, line 10 of the specification and claim 37 has been amended to be directed to the battery label shown in Figure 3. These claims are not rendered obvious by any combination of the cited references for the reasons provided below. The attached declaration signed by co-inventor, Dr. Steffen Schneider, contains details of experimental evidence for the unexpected improvement achieved from making the claimed invention. It is Dr. Schneider's expert opinion that the step of producing the strip-shaped cutout by mechanical means, i.e., by machining the cutout, which roughens the plastic film layer supporting the metallization layer, would not have been expected to durably seal the metallization layer because of the "rough" sealing surface that would be formed on the bottom of the cutout would have been expected to deteriorate the surface of the plastic film layer. In his declaration, Dr. Schneider demonstrates that the label made by the presently claimed method has the unexpected advantage of allowing a metallization layer, which has been deposited over essentially the entire surface of the plastic film layer, to be sealed in a layer composite by mechanically forming a strip-shaped cutout. The prior art does not show machining a cutout to form a sealing surface. Zaborney prints metal inks surrounded by a frame of the original surface of the plastic film layer, and it is the original surface which is sealed to an original surface of the cover layer. Floyd cuts the metallization layer through a PVB layer, which is then heated and softened to flow into a gap produced by shrinking of a substrate layer supporting the metallization. Floyd does

not suggest using a surface portion of the support layer after having machined the metallization thereon to seal the metallization.

The experimental data in Dr. Schneider's declaration shows that the labels **cut** from a layer composite material according to the present claims each have a sealed strip-shaped cutout through the metallization layer along only one of the four peripheral edges of the label. The labels were applied for six hours to absorbent paper soaked with 30% KOH. The corrosion of unsealed, i.e., unprotected, peripheral edges of each label was compared with the condition of the peripheral edge protected by the sealed gap as a reference. Tests with differently-sized gaps were performed as shown in the enclosure to the declaration. Thus, applicants submit that the presently claimed method and label has unexpectedly improved anti-corrosion properties and the advantage that the metallization layer can cover essentially the entire label. None of the prior art references have such properties.

Further, The Examiner has not explicitly indicated how the newly cited references, i.e., Will and Ast, remedy the deficiencies which resulted in the Examiner withdrawing the previous rejections. Will and Ast, similar to Zaborney, do not disclose producing a strip-shaped cutout extending through the metallization layer and along a margin of the peripheral edge, and covering at least the cutout with a sealing strip extending at least over the thickness of the metallization layer with the sealing strip extending into the cutout and flatly covering the metallization layer with a transparent covering layer such that the metallization layer is arranged between the film layer and

the covering layer, and wherein the metallization layer is completely covered on both of its flat sides, and cutting the label from the layer composite along said peripheral edge as recited in claim 18. Moreover, no combination of the cited references suggests dimensioning the label so that it projects beyond a battery edge, thereby forming a projection, and dimensioning the strip-shaped cutout so that it is the width of the projection or is narrower than the projection as recited in claim 41. Further, none of the references disclose or suggest the laminating layer extends as far as the strip-like region and fills the strip-shaped cutout between the cover layer and plastic film layer to form a sealing strip which fills the strip-shaped cutout and covers the marginal edge of said metallization layer over the thickness thereof as recited in claim 37. Moreover, no combination of the cited references disclose a label according claim 42 that comprises a projection which projects beyond a battery edge and wherein said strip-shaped cutout has the width of the projection or is narrower than the projection.

Applicants submit that the battery label of Zaborney is a jacket, i.e. it wraps around the battery and overlaps so that the transparent portion can be sealed over the portion of the metallic ink containing decoration (see col. 5, lines 22-26 of Zabrone). Will discloses that the label is glued on around the battery and shrinks such that the projecting borders 16 and 18 firmly attach to the border area of the front faces of the battery (col. 2, lines 40-45). It is clear from Figure 3 that the label of Will does not contain any gaps or cutouts. The label of Ast is similar and there is disclosure in col. 4 lines 38-50 of Ast that the end regions 19, 19 of the adhesive label overlap each other

to form the seal. Thus, the cited art relates to battery labels which are designed to wrap around a battery to seal only by shrinking and overlapping at their ends and suffers from the defects such as folds, seam-lifts, and visual imperfections which result from insufficient or improper shrinkage of the top layer. None of the references relates to covering at least the cutout with a sealing strip extending at least over the thickness of the metallization layer with the sealing strip extending into the cutout and flatly covering the metallization layer with a transparent covering layer such that the metallization layer is arranged between the film layer and the covering layer, and wherein the metallization layer is completely covered on both of its flat sides as now required by claim 18 or to a battery label wherein the laminating layer extends as far as the strip-like region and fills the strip-shaped cutout between the cover layer and plastic film layer to form a sealing strip which fills the strip-shaped cutout and covers the marginal edge of said metallization layer over the thickness thereof.

With regard to the Examiner's assertion that Floyd and Barth cure these deficiencies, Applicants submit that the laminates of Floyd and Barth are not designed to be wrapped around a cylindrical object with the transparent covering layer extending into the cutout and sealing the metallization layer with the plastic film layer and the cover layer and the peripheral edges connecting in such a way as to seal in a metallic layer. Moreover, Floyd requires cutting through the "entire thickness of the substrate layer around the full periphery of the prelamine" (col. 5, lines 43-45). However the present claims are limited to the strip-shaped cutout extending through said

metallization layer, but not through the entire thickness of the substrate layer. Will and Ast also do not contain layers which can be heated or a channel formed through the layers so that PVB (or any other component) can flow through the channel to seal off the metallic layer as taught in Floyd. Applicants believe that the same reasons and features that distinguished the claims over the combination of Zaborney, Floyd, and Barth also overcome the combination of those references with Will and Ast. There is nothing in Will and Ast that teaches or suggests the presently claimed label or method for making the claimed label.

Floyd and Barth do not disclose or suggest a sealing strip which fills the strip-shaped cutout and covers the marginal edge of the metallization layer as recited in claim 37 or the step of cutting the label from the layer composite along the peripheral edge as recited in claim 18 and Barth does not disclose a film composite in which any marginal edges of a metallization layer can be sealed before the film composite is applied to an object. Further, all of the cited battery labels seal by wrapping around the battery and overlapping at their ends. Based on the cited references, one of ordinary skill would not combine the battery labels of Will, Ast, or Zaborney, with the disclosure of Floyd and Barth to incorporate PVB layers or to eliminate the sealing mechanism of overlapping the transparent portion over the metallic portion and replace it with a mechanism of melting a PVB layer to allow PVB to flow through a channel in the layers or to create a "gap" and fill it with sealant. Even if the purported combination was made,

one would not have arrived at the presently claimed method which comprises the step of forming a strip-shaped cutout extending through said metallization layer and along a margin of the peripheral edge and covering the cutout with a sealing strip extending at least over the thickness of the metallization layer with the sealing strip extending into the cutout and flatly covering the metallization layer with a transparent covering layer, and cutting the label from the layer composite along the peripheral edge as recited in claim 18 to form the label of claim 37.

Based on the above reasoning, Applicants submit that independent claims 18 and 37 are not rendered obvious by the cited art because Will and Ast do not cure the deficiencies of Zaborney, Floyd and Barth. Rather, Will and Ast are further examples of prior art labels with disadvantages that were unexpectedly overcome by the present inventors. Furthermore, Applicants do not believe that Will, Ast, and Zaborney can be properly combined with either of Floyd or Barth, but even if these references could be combined, the combination would not render obvious the presently claimed method and battery label. Moreover, based on the unexpected nature of the finding that a strip-shaped cutout produced by mechanical means had superior properties in reducing corrosion to the label by sealing the metallization layer, applicants submit that claim 21 is not rendered obvious by any combination of the cited art. Further, no combination of the cited references suggests dimensioning the label so that it projects beyond a battery edge, thereby forming a projection, and dimensioning the strip-shaped cutout so that it

is the width of the projection or is narrower than the projection as recited in claim 41.

And no combination of the cited references disclose a label according claim 42 that comprises a projection which projects beyond a battery edge and wherein said strip-shaped cutout has the width of the projection or is narrower than the projection.

Applicants submit that claims 20-23 and 38-41 depend from claim 18 and claims 25-30 and 42 depend from claim 47, and should be allowable for at least the above reasons.

Thus, Applicants respectfully request that the rejections be withdrawn and claims 18-19, 21-23, 25-30, and 37-42 be allowed.

Conclusions

In view of the above, all rejections have been sufficiently addressed. The Applicants submit that the application is now in condition for allowance and request that claims 18-19, 21-23, 25-30, and 37-42 be allowed.

In the event that this paper is not timely filed, the Applicants respectfully petition for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account No. 02-2135.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by

telephone, the Applicants' undersigned attorney at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

Respectfully submitted,

By _____/Robert B. Murray/ _____
Robert B. Murray
Attorney for the Applicants
Reg. No. 22,980
ROTHWELL, FIGG, ERNST & MANBECK
1425 K Street, N.W. Suite 800
Washington, D.C. 20005
(202) 783-6040

Enclosure: Declaration of Dr. Schneider

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